



**CONFIDENTIAL INFORMATION – SUBJECT TO PROTECTIVE ORDER IN WT
DOCKET NO. 16-179 BEFORE THE FEDERAL COMMUNICATIONS COMMISSION**

[REDACTED VERSION – AVAILABLE FOR PUBLIC INSPECTION]

July 28, 2016

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

**Re: *Applications of Sprint Corporation and United States Cellular Corporation for
Consent to Assignment Licenses (WT Docket No. 16-179)***

Dear Ms. Dortch:

On behalf of its wholly-owned subsidiaries, Sprint Corporation (“Sprint”), hereby submits its initial response to the July 7, 2016 Information Request from the Federal Communications Commission (“FCC”) in the above-referenced proceeding.¹ This response satisfies Information Request item 1.

Because this submission contains electronic material that is Confidential, Sprint is filing this cover letter and its enclosures pursuant to the procedures established in the Protective Order that was issued on July 7, 2016 in this docket.² This submission is being delivered by hand to the Secretary’s Office, and two additional copies are being delivered to Scott Patrick of the Wireless

¹ Letter from Jon Wilkins, Chief, Wireless Telecommunications Bureau, FCC, to James B. Goldstein, Sprint Corporation, WT Docket No. 16-179 (July 7, 2016) (“Information Request”).

² In the Matter of Applications of Sprint Corporation and United States Cellular Corporation for Consent to Assign Licenses, Protective Order, July 7, 2016.

**CONFIDENTIAL INFORMATION – SUBJECT TO PROTECTIVE ORDER IN WT
DOCKET NO. 16-179 BEFORE THE FEDERAL COMMUNICATIONS COMMISSION**

Telecommunications Bureau. Sprint also is filing a copy of this cover letter for public inspection in the FCC's Electronic Comment Filing System. If you have any questions, please contact the undersigned.

Respectfully submitted,

/s/ James B. Goldstein
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RESPONSES

Question 1. On page 3 of the Public Interest Statement, the Applicants maintain that the proposed transaction would “serve the public interest by enabling more efficient operations, allowing both parties to provide more robust services to help meet the needs and demands of their customers for improved broadband wireless services and providing additional spectrum capacity” and “in those Markets where Sprint or USCC will acquire more spectrum than it is assigning, the increase in spectrum holdings will enable added capacity and improved data throughput speeds within existing coverage areas.” Our review indicates that in seven counties in all or parts of five CMAs – CMA 132 (Kalamazoo, Michigan), CMA 177 (Battle Creek, Michigan), CMA 207 (Jackson, Michigan), CMA 301 (Lawrence, Kansas), and CMA 480 (Michigan 9 – Cass) in which Sprint would realize a net gain in its PCS spectrum holdings, it would hold a maximum of 230.5 megahertz of spectrum in total post-transaction.

- a. Provide a detailed description of how the Company would use the spectrum that it would acquire under the Proposed Transaction on a standalone basis and/or in conjunction with any other of the Company’s spectrum holdings, and how it would improve spectrum capacity and efficiency of operations.**

Background for the Transaction

The spectrum exchanges between Sprint and United States Cellular Corporation (“USCC”) are intended to effectuate a voluntary divestiture of mid-band 1.7 GHz AWS-1 spectrum from Sprint to USCC in certain Southern Virginia CMAs in exchange for mid-band 1.9 GHz spectrum from USCC to Sprint in certain Michigan, Illinois and Kansas CMAs.³

The proposed transaction helps rationalize existing license holdings for both Sprint and USCC in each market, thereby benefiting both carriers, their consumers and competition. Specifically, post-transaction, Sprint will hold larger blocks of contiguous spectrum in the 1.9 GHz PCS bands than it did prior to the proposed assignments. This will enable greater use of the spectrum, wider bandwidth operations and faster data speeds than it would using smaller bandwidth channels, as described further below. In the same transaction, USCC is exchanging its limited spectral holdings in non-essential Michigan and Kansas markets where it is choosing to exit the markets for 20 MHz of contiguous AWS-1 spectrum in Southern Virginia where it seeks to improve its facilities-based service.

³ As part of the exchange, the Applicants also agreed to an equal exchange of mid-band PCS spectrum in Washington State to improve each Applicants contiguous spectrum position. The Commission’s spectrum screen is not implicated in that CMA.

**CONFIDENTIAL INFORMATION – SUBJECT TO PROTECTIVE ORDER IN WT
DOCKET NO. 16-179 BEFORE THE FEDERAL COMMUNICATIONS COMMISSION**

Sprint is assigning to USCC 20 MHz of spectrum it acquired on a temporary basis in its recent acquisition of the spectrum holdings of NTELOS.⁴ As part of the NTELOS transaction Sprint agreed to file applications to divest the 20 MHz of AWS-1 spectrum in CMA157 (Roanoke), CMA683 (VA 3 – Giles), CMA684 (VA 4 -Bedford), CMA685 (VA 5 – Bath) within 180 days of the Sprint – NTELOS transaction closing. In anticipation of this voluntary commitment, Sprint negotiated with USCC for a mutually beneficial spectrum exchange so that USCC would obtain the 20 MHz of AWS-1 spectrum in markets it desired in exchange for Sprint receiving mid-band spectrum in other markets. The parties sought to exchange sufficient spectrum of comparable value such that no additional cash consideration from either Applicant would be necessary. USCC offered to make mid-band PCS spectrum available in Michigan, Kansas and Illinois as markets it was willing to exchange for the Sprint-held AWS-1 spectrum in Southern Virginia.

In exchange for the 20 MHz AWS – 1 spectrum divestitures in Southern Virginia, Sprint increases its spectrum holdings in CMA177 (Battle Creek, MI) by 20 MHz from 210.5 MHz to 230.5 MHz post-transaction, in CMA132 (Kalamazoo, MI) from 200.5 MHz to 220.5 MHz post-transaction, in CMA207 (Jackson, MI) from 210.5 to 220.5 MHz post-transaction, and in CMA480 (MI 9 – Cass) from 182.7 MHz to 202.7 MHz post-transaction. In CMA301 (Lawrence, KS) Sprint increases its spectrum holdings from 192.7 to 202.7 MHz post-transaction.⁵

The Commission requests information on the operational impact to Sprint in these four Michigan-area CMAs, and the one Kansas-area CMA. To evaluate this impact in these five CMAs, Sprint will (1) compare and contrast Sprint’s pre-exchange spectrum position with its post-exchange spectrum position; and (2) provide the context of performing the spectrum exchanges both nationwide and at the local CMA level.

⁴ In the Matter of SprintCom, Inc., Shenandoah Personal Communications, LLC and NTELOS Holdings Corp., For Consent to Assign Licenses and Spectrum Lease Authorizations and to Transfer Control of Spectrum Lease Authorizations and an International Section 214 Authorization, Memorandum Opinion and Order, ___ FCC Rcd ___, DA 16-413, WT Docket 15-262 (April 15, 2016).

⁵ In 2014, the Commission adopted a revised spectrum screen which increased the amount of “high-band” 2.5 GHz spectrum that would be counted in the spectrum screen. This modification of the spectrum screen caused many Sprint markets to be above the Commission’s 199 MHz spectrum screen, even before transactions are considered. *See Policies Regarding Mobile Spectrum Holdings; Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, WT Docket No. 12-269, GN Docket No. 12-268, *Report and Order*, 29 FCC Rcd 6133 (2014) (“*Spectrum Holdings Order*”), *recon. denied, Order on Reconsideration*, 30 FCC Rcd 8635 (2015). The Commission noted, however, “the revised screen would not “prevent” any transactions; it is a screen, not a cap, and the Commission retains the authority to approve proposed transactions that are in the public interest, even if those transactions trigger the spectrum screen.” *Spectrum Holdings Order* at ¶ 277. The Commission also noted “applications involving small amounts of high-band spectrum, particularly EBS spectrum, likely would present limited potential for public interest harms.” *Id.* ¶ 289.

**CONFIDENTIAL INFORMATION – SUBJECT TO PROTECTIVE ORDER IN WT
DOCKET NO. 16-179 BEFORE THE FEDERAL COMMUNICATIONS COMMISSION**

Pre-Spectrum Exchange Spectrum Position

Sprint has a combination of low-band, mid-band and high-band spectrum assets on which to deploy 3G voice (CDMA) and 3G data service (EV-DO) as well as 4G LTE broadband services.⁶ Prior to the spectrum exchange, in all five CMAs at issue Sprint is attributed 14 MHz of “low-band” (below-1-GHz) 800 MHz spectrum, between 20 and 30 MHz of “mid-band” 1.9 GHz spectrum, and between 135.7 and 156.5 MHz of attributed “high-band” 2.5 GHz spectrum (leased and directly licensed).

In all five Michigan and Kansas CMAs, Sprint currently provides 3G voice (CDMA), 3G data (EV-DO) and 4G LTE in the 1.9 GHz band, and provides 4G LTE-TD in the 2.5 GHz band.⁷ In Kansas Sprint has fully deployed 800 MHz CDMA and 5 x 5 MHz 800 MHz LTE throughout the CMA. In Michigan, Sprint has deployed 800 MHz 3G CDMA and 4G LTE in three of the four CMAs.⁸

⁶ Low-band spectrum is typically advantageous for greater coverage due to enhanced propagation characteristics of low-band spectrum, while mid-band spectrum is beneficial for both coverage and capacity. Higher-band spectrum provides opportunities for even greater capacity and data speeds due to larger blocks of spectrum, but due to propagation challenges the higher-band spectrum requires a more dense deployment.

⁷ Sprint transitioned from WiMAX to 4G LTE in the 2.5 GHz band in March 2016 with the decommissioning of the WiMAX Network. **[Begin confidential information]**

[End confidential information]

⁸ Sprint currently has limited use of its 14 MHz of 800 MHz band spectrum in certain portions of the Michigan CMAs because certain counties are located within 100 km of the US – Canada Border. This proximity to the US – Canada Border requires additional planning to ensure compliance with international technical requirements since a portion of the 800 MHz spectrum block (821 – 824 MHz/866 - 869 MHz) is not US primary spectrum. Therefore, use of the 800 MHz band for 4G LTE requires more extensive technical planning along the border prior to use. Thus, while Sprint is attributed with this 14 MHz of spectrum in CMA207 (Jackson, MI), the 14 MHz is not currently deployed in 800 MHz CDMA or 800 MHz LTE. Thus, Sprint’s apparent spectrum holdings total of 220.5 MHz in CMA207 over-counts its currently usable spectrum. Sprint is utilizing its 14 MHz of 800 MHz spectrum in Western portions of Michigan, unaffected by U.S. – Canada Border considerations in Kalamazoo, Battle Creek and Cass, Michigan CMAs.

**CONFIDENTIAL INFORMATION – SUBJECT TO PROTECTIVE ORDER IN WT
DOCKET NO. 16-179 BEFORE THE FEDERAL COMMUNICATIONS COMMISSION**

The attached charts of the 1.9 GHz PCS band shows the pre-exchange and post-exchange spectrum positions (channel block by channel block) of Sprint, as well as Sprint's nationwide facilities-based competitors (AT&T, Verizon and T-Mobile) in these five CMAs (separating Michigan CMAs from Kansas CMA). USCC's current spectrum position is also included on these charts.⁹

Each 1.25 MHz channel block within the 1.9 GHz band is suitable for 3G CDMA (voice) or 3G EV-DO (data) or channels can be combined to form wider bandwidth 4G LTE carriers.¹⁰ 4G LTE carriers require combinations of channel blocks to create either a 5 x 5 MHz, 10 x 10 MHz, 15 x 15 MHz or 20 x 20 MHz channels.¹¹

Lawrence, Kansas CMA:

[illegible]

In the Kansas CMA, Sprint's pre-exchange 1.9 GHz PCS spectrum position in this market consists of a 15 x 15 MHz block of spectrum block (A Block), and Sprint's nationwide 5 x 5 MHz block (G Block) at the other end of the PCS band. Post-exchange, Sprint's gains the 5 x 5 MHz 1.9 GHz E Block, and retains A Block and G Block spectrum.

⁹ In the chart, AT&T is in blue, T-Mobile is in magenta, Verizon is in red and Sprint is in yellow. U.S. Cellular is indicated in the pre-swap chart in light-blue and marked with “USCC.” Sprint has no insight into USCC’s operational deployment in the five CMAs.

¹⁰ Grey colored channels between each carriers operations are “guard band” channels.

¹¹ 1.25 MHz channel blocks that fall outside these 4G LTE sized bandwidths have less utility to Sprint given its move towards 4G LTE deployment nationwide. In the case of these five CMAs Sprint's pre-exchange and post-exchange spectrum holdings do not implicate this issue.

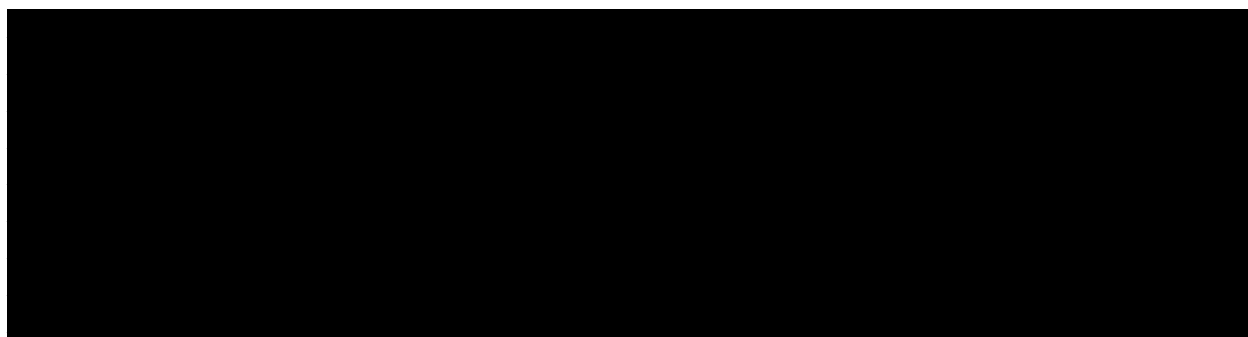
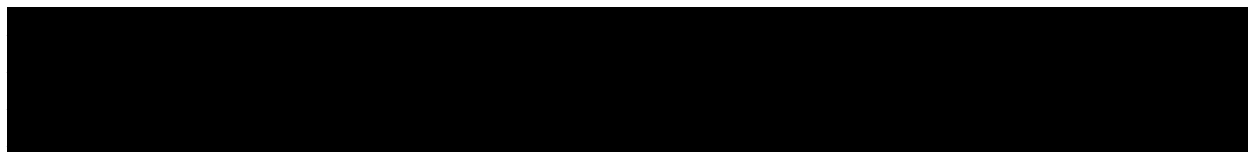
**CONFIDENTIAL INFORMATION – SUBJECT TO PROTECTIVE ORDER IN WT
DOCKET NO. 16-179 BEFORE THE FEDERAL COMMUNICATIONS COMMISSION**

As part of the instant spectrum exchange, Sprint achieves goal number 1 (creation of additional contiguous spectrum for 4G LTE) in the five CMAs.

Lawrence, Kansas CMA301

The following chart and description shows Sprint's current (pre-exchange) spectrum usage in the Lawrence CMA and the post-exchange expected spectrum usability.

[Begin confidential information]



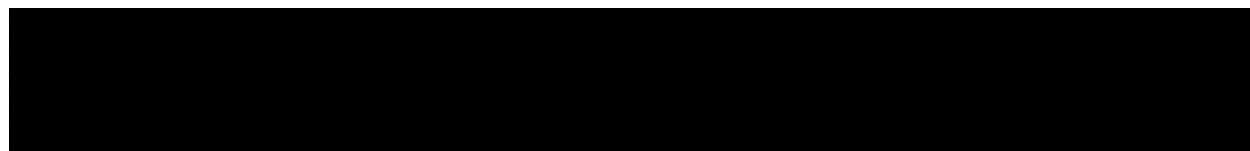
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**CONFIDENTIAL INFORMATION – SUBJECT TO PROTECTIVE ORDER IN WT
DOCKET NO. 16-179 BEFORE THE FEDERAL COMMUNICATIONS COMMISSION**

Kalamazoo, Michigan CMA132

The following chart shows Sprint's current (pre-exchange) spectrum usage in the Kalamazoo CMA and the post-exchange spectrum expected usability with the addition of a 10 x 10 MHz spectrum block.

[Begin confidential information]



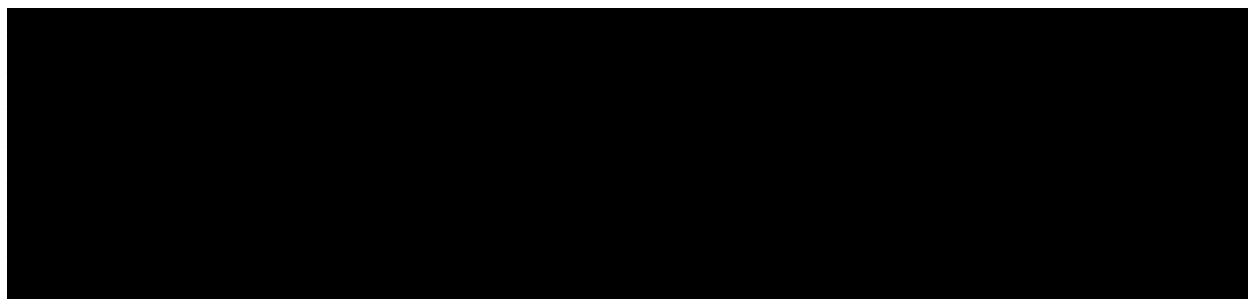
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**CONFIDENTIAL INFORMATION – SUBJECT TO PROTECTIVE ORDER IN WT
DOCKET NO. 16-179 BEFORE THE FEDERAL COMMUNICATIONS COMMISSION**

Battle Creek, Michigan CMA177

The following chart shows Sprint's current (pre-exchange) spectrum usage in the Battle Creek CMA and the post-exchange expected spectrum usability with the addition of a 10 x 10 MHz spectrum block.

[Begin confidential information]



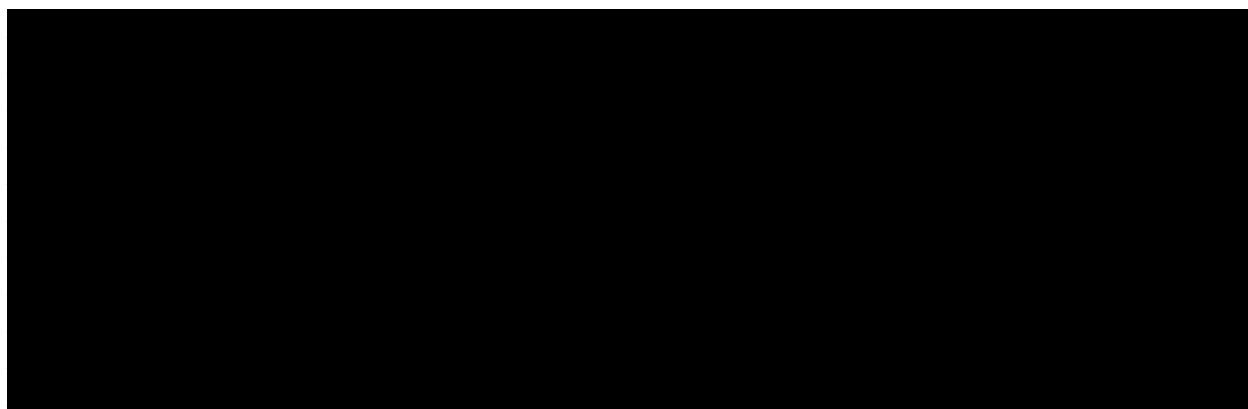
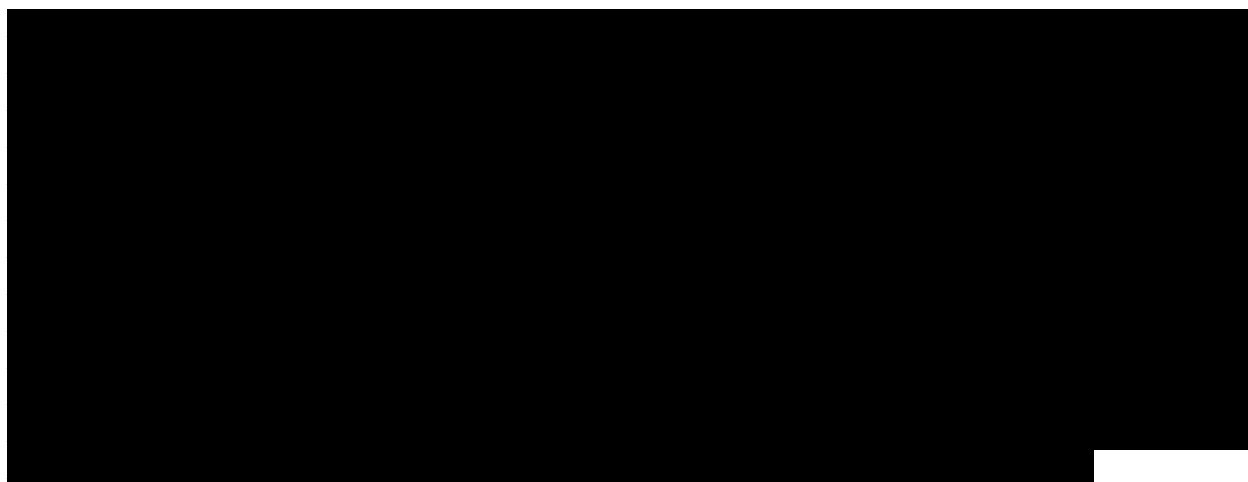
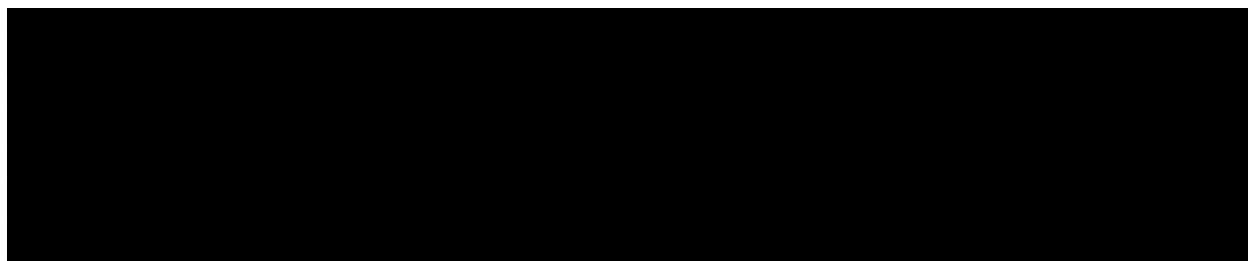
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**CONFIDENTIAL INFORMATION – SUBJECT TO PROTECTIVE ORDER IN WT
DOCKET NO. 16-179 BEFORE THE FEDERAL COMMUNICATIONS COMMISSION**

Cass, Michigan CMA480

The following chart shows Sprint's current (pre-exchange) spectrum usage in the Cass, MI CMA and the post-exchange expected spectrum usability with the addition of a 10 x 10 MHz spectrum block in two counties and a 5 x 5 MHz spectrum block in Hillsdale County.

[Begin confidential information]



[REDACTED]

[REDACTED]

[REDACTED]

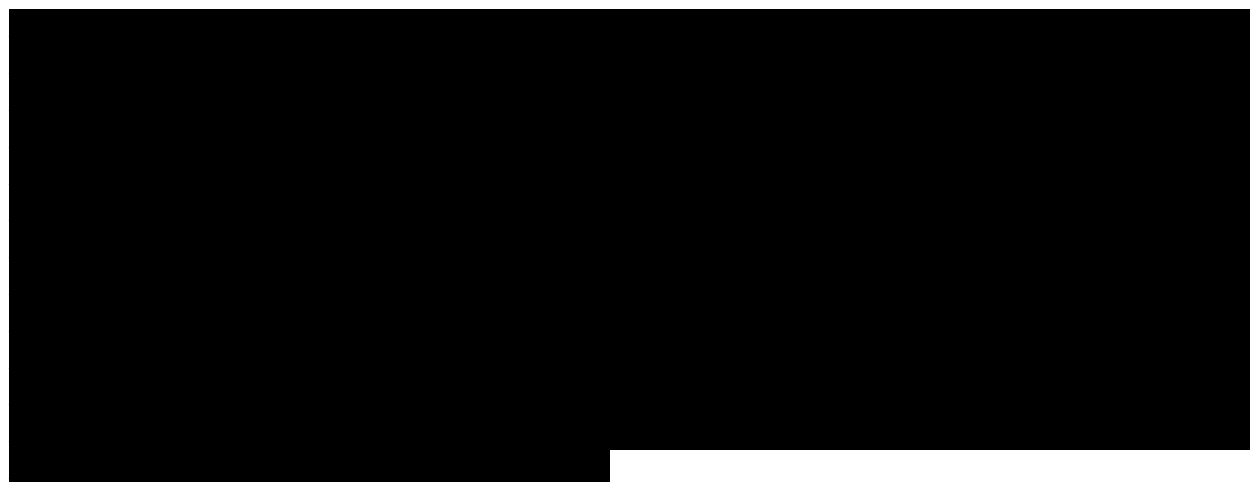
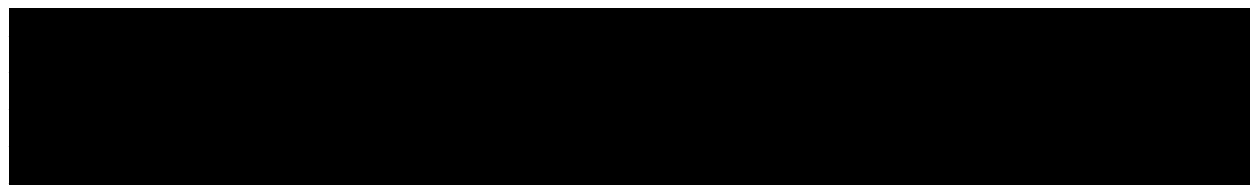
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**CONFIDENTIAL INFORMATION – SUBJECT TO PROTECTIVE ORDER IN WT
DOCKET NO. 16-179 BEFORE THE FEDERAL COMMUNICATIONS COMMISSION**

Jackson, Michigan CMA207

The following chart shows Sprint's current (pre-exchange) spectrum usage in the Jackson, MI CMA and the post-exchange expected spectrum usability with the addition of a 5 x 5 MHz spectrum block.

[Begin confidential information]



[End confidential information]

**CONFIDENTIAL INFORMATION – SUBJECT TO PROTECTIVE ORDER IN WT
DOCKET NO. 16-179 BEFORE THE FEDERAL COMMUNICATIONS COMMISSION**

- b. Provide a detailed explanation of why this additional aggregation of spectrum is necessary to provide the Company's customers with broadband wireless services, and why this additional aggregation of spectrum above the general spectrum screen does not raise any competitive concerns.**

As described above, Sprint increases its spectrum holdings in CMA177 (Battle Creek, MI) by 20 MHz from 210.5 MHz to 230.5 MHz post-transaction, in CMA 132 (Kalamazoo, MI) from 200.5 MHz to 220.5 MHz post-transaction, in CMA207 (Jackson, MI) from 210.5 to 220.5 MHz post-transaction, and in CMA480 (MI 9 – Cass) from 182.7 MHz to 202.7 MHz post-transaction. In CMA 301 (Lawrence, KS) Sprint increases its spectrum holdings from 192.7 to 202.7 MHz post-transaction. Sprint explained in its response to Question 1(a) the benefits it would achieve with greater contiguous spectrum and a long-term deployment of 4G LTE on larger blocks of contiguous spectrum.

This transaction does not involve any transfer of customers. It is purely a transaction of spectrum rights. Post-transaction, it is Sprint's understanding that USCC will be vacating the Michigan and Kansas CMAs from a facilities-based operational perspective since it will longer be licensed to operate in these CMAs.¹² While Sprint has no insight into USCC's current service offerings or operations in these areas pre-transaction, a review of USCC's website showed no stores in any of the five CMAs. It is Sprint's understanding that post-transaction USCC will provide roaming on other carrier's networks for any USCC customers from other areas traveling into the Michigan or Kansas CMAs. Despite this potential loss of USCC as a full-fledged operator in these CMAs, there are three other nationwide carriers holding CMRS spectrum and providing service in the five markets in which Sprint realizes a gain in attributable spectrum. *See* Exhibit 3A to the Joint Sprint – USCC Public Interest Statement showing Verizon, AT&T, T-Mobile, as well as Dish, as existing and potential competitors in these five CMAs.

In terms of “mid-band” spectrum at issue, each of Sprint's nationwide competitors holds ample and comparable mid-band spectrum totals in these five CMAs even after the assignment spectrum from USCC to Sprint.

¹² Post-transaction, US Cellular will not retain PCS band spectrum in any of the five CMAs. In St. Joseph County, MI (part of CMA480), King Street Wireless holds the 700 MHz Band A Block license. USCC holds a 90% non-controlling interest in King Street Wireless.

**CONFIDENTIAL INFORMATION – SUBJECT TO PROTECTIVE ORDER IN WT
DOCKET NO. 16-179 BEFORE THE FEDERAL COMMUNICATIONS COMMISSION**

Michigan Area CMAs Low-Band, Mid-Band, Upper-Band and Total Spectrum Holdings of Four Nationwide Carriers

FIPS	COUNTY	STATE	POPS	CMA	CMA NAME	Sprint LB	Sprint MB	Sprint UB	Sprint Total	AT&T LB	AT&T MB	AT&T UB	AT&T Total	T-Mobile LB	T-Mobile MB	T-Mobile UB	T-Mobile Total	Verizon LB	Verizon MB	Verizon UB	Verizon Total	Included in Transaction
26077	Kalamazoo	MI	251203	CMA132	Kalamazoo	14	50	156.5	220.5	55	60	20	135	12	80	0	92	47	60	0	107	Y
26159	Van Buren	MI	78327	CMA132	Kalamazoo	14	50	156.5	220.5	55	60	20	135	12	80	0	92	47	60	0	107	Y
26015	Barry	MI	58018	CMA177	Battle Creek	14	60	156.5	230.5	55	70	20	145	12	55	0	67	47	65	0	112	Y
26025	Calhoun	MI	134604	CMA177	Battle Creek	14	60	156.5	230.5	55	70	20	145	12	55	0	67	47	65	0	112	Y
26075	Jackson	MI	159204	CMA207	Jackson	14	50	156.5	220.5	55	40	20	115	12	85	0	97	47	85	0	132	Y
26023	Branch	MI	44047	CMA480	MI 9 - Cass	14	60	120.9	194.9	55	50	20	125	12	75	0	87	47	65	0	112	Y
26027	Cass	MI	49553	CMA480	MI 9 - Cass	14	40	156.5	210.5	55	60	20	135	0	90	0	90	47	60	0	107	N
26059	Hillsdale	MI	45937	CMA480	MI 9 - Cass	14	50	120.9	184.9	55	40	20	115	12	85	0	97	47	85	0	132	Y
26091	Lenawee	MI	98799	CMA480	MI 9 - Cass	14	40	156.5	210.5	55	50	20	125	12	80	0	92	47	90	0	137	N
26149	St. Joseph	MI	61058	CMA480	MI 9 - Cass	14	50	138.7	202.7	55	50	20	125	0	80	0	80	47	70	0	117	Y

Lawrence, Kansas CMA Low-Band, Mid-Band, Upper-Band and Total Spectrum Holdings of Four Nationwide Carriers

STATE	POPS	CMA	CMA NAME	Sprint LB	Sprint MB	Sprint UB	Sprint Total	AT&T LB	AT&T MB	AT&T UB	AT&T Total	T-Mobile LB	T-Mobile MB	T-Mobile UB	T-Mobile Total	Verizon LB	Verizon MB	Verizon UB	Verizon Total	Included in Transaction
KS	118724	CMA301	Lawrence	14	50	138.7	202.7	55	80	20	155	12	70	0	82	47	50	0	97	Y

- In the Kansas CMA at issue, while Sprint will be licensed for 50 MHz of mid-band spectrum post-transaction, AT&T will be licensed for 80 MHz, T-Mobile will be licensed for 70 MHz and Verizon will be licensed for 50 MHz.
- In the four Michigan CMAs at issue, post-transaction Sprint will be licensed for between 40 and 60 MHz of mid-band spectrum, AT&T will be licensed for between 40 MHz and 70 MHz in the same counties, T-Mobile will be licensed for between 55 MHz and 80 MHz and Verizon will be licensed for 60 to 90 MHz mid-band spectrum in these markets.¹³
- Overall, each carrier has a mix of low, mid and high band spectrum in which to provide and maintain service. This is reflected in the post-exchange spectrum aggregation charts above.

¹³ In addition to Sprint's three nationwide carriers having comparable (if not greater) amounts of mid-band spectrum post-transaction, both Verizon and AT&T will also have more (3 to 4 times as much) low-band spectrum than Sprint in the five CMAs. While Sprint acknowledges it has a greater amount of high-band spectrum than its competitors in these markets, Sprint provided ample documentation in the *Spectrum Holdings* proceeding that higher-band spectrum requires a greater number of sites (and capital investment) to deploy.

**CONFIDENTIAL INFORMATION – SUBJECT TO PROTECTIVE ORDER IN WT
DOCKET NO. 16-179 BEFORE THE FEDERAL COMMUNICATIONS COMMISSION**

Sprint acknowledges that this transaction only enhances its ability to provide broadband services, given its existing spectrum assets in 800 MHz, 1.9 GHz and 2.5 GHz bands and the additional aggregation of spectrum it is obtaining is not “fundamental” to Sprint’s provision of these services. However, the additional mid-band spectrum it is obtaining in the Michigan and Kansas markets will allow Sprint to provide more 4G LTE services post-transaction, without degradation to its existing 3G CDMA/EV-DO Network. The Commission is well aware of the faster data speeds and improved customer experience 4G LTE provides over 3G CDMA/EV-DO Networks. Given the ample spectrum holdings and present buildout status of its nationwide competitors in these same markets, Sprint’s acquisition of additional spectrum would not harm competition in these markets but would in fact improve Sprint’s ability to compete through Network improvements and more robust services for its customers through the transition to 4G LTE.

Provide all documents relied on in preparing the responses to 1(a) and 1(b).

None

Provide separate responses to each of 1(a) and 1(b).